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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,664	09/30/2003	Torsten Niederdrank	P03,0382	5809
26574	7590	08/11/2005	EXAMINER	
SCHIFF HARDIN, LLP PATENT DEPARTMENT 6600 SEARS TOWER CHICAGO, IL 60606-6473			ENSEY, BRIAN	
			ART UNIT	PAPER NUMBER
			2646	

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/675,664

Applicant(s)

NIEDERDRANK, TORSTEN

Examiner

Brian Ensey

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 02/17/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson U.S. Patent No. 5,721,783 in view of Nishdai Japanese Patent Application Publication 2000-183782 in view of Katayanagi et al. U.S. Patent No. 5,732,390.

Regarding claim 1, Anderson discloses a hearing device, comprising: a radio device (16) to transmit signals to a second hearing device (10), the radio device comprising an antenna (14) device to perform at least one of transmitting and receiving (See Fig. 1 and col. 3, line 52 to col. 4, line 24). Anderson further teaches the use of oscillation circuits in the earpiece (See col. 10, lines 29-37) and also teaches the need for size reduction and reduced power consumption. Anderson does not expressly disclose the antenna device comprising a self-exciting oscillation circuit. However, Nishdai teaches an antenna circuit for a transmitter/receiver comprising a self-oscillation circuit (See abstract solution and fig. 9). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize an antenna comprising a self oscillation circuit for size reduction and reduced power consumption.

Regarding claim 2, Anderson does not expressly disclose the antenna device consists exclusively of an LC oscillation circuit. However, Nishdai teaches an antenna circuit for a transmitter/receiver consisting exclusively of a LC oscillation circuit (See abstract solution and fig. 9). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize an antenna comprising a LC oscillation circuit for size reduction and reduced power consumption.

Regarding claim 3, Anderson discloses a hearing aid as claimed. Anderson further teaches simultaneous capabilities of noise cancellation and binaural processing and does not limit the methods of performing noise reduction (See col. 2, lines 60-65). Anderson does not expressly disclose a receiving device comprising a median filter device configured to reduce noise signals. However, the use of median filters for noise reduction in transmitting and receiving devices is well known in the art and Katayanagi teaches using a median filter in noise reduction (See col. 10, lines 23-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a median filter to capture a mid value and report and accurate level for noise reduction (See col. 10, lines 23-30).

Regarding claim 4, Anderson discloses a two way wireless communication link (See col. 1, lines 50-63). Anderson does not expressly disclose a half-duplex transmission line is established with the radio device. However, half duplex communication is merely communication which occurs in one direction at a time and Anderson teaches transmission from one device to the other for processing and then back and the need for size reduction and reduced power consumption.. It would have been obvious to one of ordinary skill in the art at the time of the invention that half duplex communication is used for reduced power consumption.

Regarding claim 5, Anderson discloses a signal transmission is implemented in the long-wave range with the radio device (See col. 4, lines 26-29).

Regarding claim 6, Anderson discloses a hearing device, comprising: a receiving device configured to receive a plurality of values of at least one radio signal (See col. 4, lines 26-64). Anderson does not expressly disclose the receiving device comprising a median filter device with which a median value of the plurality of values is determined for noise signal prevention. However, the use of median filters for noise reduction in transmitting and receiving devices is well known in the art and Katayanagi teaches using a median filter in noise reduction (See col. 10, lines 23-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a median filter to capture a mid value and report an accurate level for noise reduction (See col. 10, lines 23-30).

Regarding claim 7, Anderson does not expressly disclose the antenna device comprising a self-exciting oscillation circuit. However, Nishdai teaches an antenna circuit for a transmitter/receiver comprising a self-oscillation circuit (See abstract solution and fig. 9). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize an antenna comprising a self oscillation circuit for size reduction and reduced power consumption.

Regarding claim 8, Anderson does not expressly disclose the antenna device consists exclusively of an LC oscillation circuit. However, Nishdai teaches an antenna circuit for a transmitter/receiver consisting exclusively of a LC oscillation circuit (See abstract solution and fig. 9). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize an antenna comprising a LC oscillation circuit for size reduction and reduced power consumption.

Regarding claim 9, Anderson discloses a two way wireless communication link (See col. 1, lines 50-63). Anderson does not expressly disclose a transmitter device configured to permit a half-duplex transmission line to be established with the receiving device and the transmitter

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device. However, half duplex communication is merely communication which occurs in one direction at a time and Anderson teaches transmission from one device to the other for processing and then back and the need for size reduction and reduced power consumption. It would have been obvious to one of ordinary skill in the art at the time of the invention that half duplex communication is used for reduced power consumption.

Regarding claim 10, Anderson discloses a signal transmission is implemented in the long-wave range with the radio device (See col. 4, lines 26-29).

Regarding claim 11, Anderson does not expressly disclose each of the plurality of values is a measure for a period duration of the self-exciting oscillation circuit. However, Katayanagi teaches each of the plurality of values is a measure for a period duration or frames (See col. 10, lines 23-30). It would have been obvious to one of ordinary skill in the art at the time of the invention to measure the signal of oscillation for a set duration to capture a mid value and report an accurate level for noise reduction (See col. 10, lines 23-30).

Regarding claim 12, Anderson further discloses a receiving device (14) (See Fig. 1). Anderson does not expressly disclose an LC oscillation circuit that is configured both to generate a carrier frequency for transmission and to clock the receiving device. However, Nishidai teaches an LC oscillation circuit that is configured both to generate a carrier frequency for transmission and to clock the receiving device (See Figs. 1 and 4 and translation paragraphs 0011-0013). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the oscillation circuit of Nishidai for the oscillation circuit of Anderson to reduce size and save power (See Nishidai translation paragraph 0012).

Regarding claim 13, Anderson does not expressly disclose the LC oscillation circuit is used to clock a filter device of the receiving device. However, Nishidai teaches the LC oscillation circuit is used to clock a filter (7) device of the receiving device (See Figs. 1 and 4

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and translation paragraphs 0011-0013). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the oscillation circuit of Nishidai for the oscillation circuit of Anderson to reduce size and save power (See Nishidai translation paragraph 0012).

Regarding claim 14, Anderson further discloses a receiving device configured to receive a plurality of values of at least one radio signal and an antenna device (See col. 4, lines 26-64). Anderson does not expressly disclose the receiving device comprising a median filter device with which a median value of the plurality of values is determined for noise signal prevention. However, the use of median filters for noise reduction in transmitting and receiving devices is well known in the art and Katayanagi teaches using a median filter in noise reduction (See col. 10, lines 23-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a median filter to capture a mid value and report an accurate level for noise reduction (See col. 10, lines 23-30). Anderson does not expressly disclose a self-exciting oscillation circuit comprising an LC oscillation circuit, wherein the LC oscillation circuit is used both to generate a carrier frequency for transmission and to clock the receiving device. However, Nishidai teaches an LC oscillation circuit that is configured both to generate a carrier frequency for transmission and to clock the receiving device (See Figs. 1 and 4 and translation paragraphs 0011-0013). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the oscillation circuit of Nishidai for the oscillation circuit of Anderson to reduce size and save power (See Nishidai translation paragraph 0012).

Regarding claim 15, Anderson does not expressly disclose the LC oscillation circuit is used to clock a filter device of the receiving device. However, Nishidai teaches the LC oscillation circuit is used to clock a filter (7) device of the receiving device (See Figs. 1 and 4 and translation paragraphs 0011-0013). It would have been obvious to one of ordinary skill in the

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art at the time of the invention to utilize the oscillation circuit of Nishidai for the oscillation circuit of Anderson to reduce size and save power (See Nishidai translation paragraph 0012).

Regarding claim 16, Anderson a method for noise signal reduction in hearing device receiving signals, comprising: receiving a plurality of values of at least one radio signal via a hearing device (See col. 4, lines 26-64). Anderson does not expressly disclose the receiving device comprising a median filter device with which a median value of the plurality of values is determined for noise signal prevention. However, the use of median filters for noise reduction in transmitting and receiving devices is well known in the art and Katayanagi teaches using a median filter in noise reduction (See col. 10, lines 23-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a median filter to capture a mid value and report an accurate level for noise reduction (See col. 10, lines 23-30).

Regarding claim 17, Anderson does not expressly disclose providing an LC oscillation circuit that both generates a carrier frequency for transmission and clocks, the median filtering. However, Nishidai teaches an LC oscillation circuit that is configured both to generate a carrier frequency for transmission and to clock the receiving device and filter(See Figs. 1 and 4 and translation paragraphs 0011-0013). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the oscillation circuit of Nishidai for the oscillation circuit of Anderson to reduce size and save power (See Nishidai translation paragraph 0012).

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Ensey whose telephone number is 571-272-7496. The examiner can normally be reached on Monday - Friday 6:30 AM - 3:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**Or faxed to:**

(571) 273-8300, for formal communications intended for entry and for informal or draft communications, please label "PROPOSED" or "DRAFT".

Hand-delivered responses should be brought to: Customer Service Window, Randolph Building, 401 Dulany Street, Arlington, VA 22314

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BKE  
July 26, 2005



**SINH TRAN**  
**SUPERVISORY PATENT EXAMINER**